



Department of Environmental Quality, Water Bureau

**PESTICIDE APPLICATION  
TO SURFACE WATERS OF THE STATE OF MICHIGAN**

Permits are required by Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and Part 33, Aquatic Nuisance Control, of the NREPA (Part 33).

**AQUATIC NUISANCE CONTROL GENERAL PERMIT**

**GENERAL PERMIT NUMBER ANCG09-94  
AQUATIC NUISANCE CONTROL ACTIVITIES  
ALONG THE GREAT LAKES AND LAKE ST. CLAIR  
FOR CERTAIN NON-NATIVE INVASIVE AQUATIC PLANTS**

Date Effective: January 1, 2009

Date Expires: December 31, 2009

In compliance with the provisions of Part 33 of the NREPA, pesticides are authorized to be applied to waters of the state (waterbody) for the control of nuisance aquatic plants in accordance with the requirements and conditions set forth in this Aquatic Nuisance Control General Permit.

The applicability of this General Permit shall be limited to chemical treatment of certain non-native, invasive aquatic plants along the exposed bottomlands of the Great Lakes and connecting waters where the treatment will not negatively impact human health and will have no more than minimal short-term adverse impacts on the natural resources and environment.

In order to have authorization to chemically treat waters of the state under this General Permit, the permittee must be issued a Certificate of Coverage (COC) by the Michigan Department of Environmental Quality (DEQ). The following will be identified in the COC:

- COC number
- date effective / issued
- expiration date
- permittee name and address
- specific waterbody name and location for which authorization to chemically treat is granted

The terms and conditions of this General Permit shall apply to the permittee for the identified waterbody on the effective date of a COC issued by the DEQ.

The provisions of this General Permit are severable.

All contact with the DEQ as required by this General Permit shall be with the DEQ representative identified in the COC, Aquatic Nuisance Control and Remedial Action Unit, Water Bureau, DEQ, located at 525 West Allegan Street, Lansing, Michigan, 48913, telephone 517-241-7734, facsimile 517-335-4381, and/or e-mail: [deq-lwm-anc@michigan.gov](mailto:deq-lwm-anc@michigan.gov).

## Section A. Qualified Sites

A site qualifies under this General Permit provided both of the following criteria are met:

- The area to be treated is located below the ordinary high-water mark of the Great Lakes (Lakes Erie, Huron, Michigan, and Superior) or Lake St. Clair; and
- The target for selective chemical control is one or more of the following non-native, invasive aquatic plants:
  - Phragmites, or common reed (*Phragmites australis*)
  - Purple loosestrife (*Lythrum salicaria*)
  - Reed canary grass (*Phalaris arundinacea*)

## Section B. Authorizations and Coverage Provisions

### 1. Authorized Areas

Chemical treatment for control of non-native, invasive aquatic plants is authorized only to waters of the state as defined by this General Permit, specified by the issued COC, and identified on the treatment map(s) submitted with the application and on file with the DEQ.

Areas where chemical treatment for control of non-native, invasive aquatic plants is undertaken must be either under the legal control of the permittee or the party(ies) who has/have granted the permittee permission to do the treatment, or otherwise in accordance with Section 3308 of Part 33.

### 2. Chemical Application

Follow all pesticide label instructions to protect self, others and the environment. The label is provided with the pesticide container. It explains how to use the pesticide safely, effectively, and may suggest ways to avoid unintended impacts to human health and the environment. Read and understand the label before mixing or applying any pesticide. Most labels list a toll-free number for consumers. Pesticide labels are federally-approved legal documents and their requirements are enforced under both federal and state laws.

The application of chemical products to the qualified sites is restricted to the products in the following table, at the stated maximum application rates. The necessary application rate may be lower than the maximum rate listed in the table, and may depend on several factors, including the timing of the treatment, the use of additives such as surfactants, and various site conditions. See Section A4 below and the product label for additional guidance.

Active Ingredient	Approved Brand	U.S. EPA Reg No.	Maximum Application Rate		
			Phragmites	Purple loosestrife	Reed canary grass
glyphosate	Accord Concentrate <sup>1</sup>	62719-324	6.0 pints/acre	4.0 pints/acre	4.5 pints/acre
	Aquamaster Herbicide <sup>1</sup>	524-343			
	Aquapro Herbicide <sup>1</sup>	62719-324-67690			
	Aqua Star <sup>1</sup>	42750-59			
	Glyfos Aquatic Herb <sup>1</sup>	4787-34			
	Riverdale Aqua Neat Aquatic Herbicide <sup>1</sup>	228-365			
	Rodeo <sup>1</sup>	62719-324			
	Shore-Klear <sup>1</sup>	228-365-8959			
glyphosate plus surfactant	ShoreKlear – Plus	228-367-8959	2.6 gal/acre	1.7 gals/acre	2.0 gals/acre
imazapyr	AquaPier <sup>1,2</sup>	74477-6-67690	6.0 pints/acre	1.0 pint/acre	4.0 pints/acre
	Habitat <sup>1,2</sup>	241-426			
triclopyr	Renovate 3 <sup>1</sup>	62719-37-67690	--	8.0 quarts/acre	--

(continued)

Active Ingredient	Approved Brand	U.S. EPA Reg No.	Maximum Application Rate		
			Phragmites	Purple loosestrife	Reed canary grass
n/a (additives <sup>1</sup> )	AGRI-DEX (adjuvant)	n/a	4.0 pints/acre	4.0 pints/acre	4.0 pints/acre
	Cygnat Plus (adjuvant)	n/a	1.0 pint/acre	1.0 pint/acre	1.0 pint/acre
	PolyAn (drift control)	n/a	8.0 oz/100 gal spray sol	8.0 oz/100 gal spray sol	8.0 oz/100 gal spray sol
	TopFilm (adjuvant)	n/a	1.0 pint/acre	1.0 pint/acre	1.0 pint/acre
	Tracer dye (colorant)	n/a	1.0 oz/ gal concentrate	1.0 oz/ gal concentrate	1.0 oz/ gal concentrate

<sup>1</sup> Certain herbicide labels require or strongly recommend the use of additives to aid herbicide uptake, improve effectiveness, and minimize non-target impacts.

<sup>2</sup> Application of AquaPier or Habitat can only be made by federal or state agencies, municipal officials and the U.S. Army Corps of Engineers, or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the state or local government.

### 3. Treatment Intervals

Only a single chemical treatment should be necessary each year. Use the maximum application rate approved for the product (unless multiple products are mixed). Conducting multiple low-dosage treatments is not supported by current research. However, if other factors prohibit the use of the full product amount in a given area, additional treatment(s) may be conducted provided that a minimum length of time is observed between treatments, in accordance with the federal product labels. Multiple treatments may not be necessary if the initial treatment is conducted properly. Visible signs of treatment effectiveness may not be apparent for weeks.

Active Ingredient	Minimum Treatment Interval
glyphosate	24 hours minimum between treatments
imazapyr <sup>1</sup>	10 days minimum between treatments
triclopyr <sup>1</sup>	10 days minimum between treatments

<sup>1</sup> Per the federal product labels, do not apply more than 6 pints of imazapyr per acre per year or 8 quarts of triclopyr per acre per year.

### 4. Special Conditions

This General Permit is intended to allow for the selective chemical control of the non-native, invasive aquatic plant species identified above in Section A. Glyphosate and imazapyr products are broad-spectrum herbicides and can damage all types of vegetation. Triclopyr is generally selective against only broad-leaf species such as purple loosestrife, however it may also affect other species. All herbicides are to be applied in a manner which best targets the invasive species. Refer to the product label requirements and suggestions to optimize selectivity. The applicator is expected to take all practical measures to avoid impacting non-target vegetation and make each treatment as selective as possible, such as through the careful selection of equipment, method of application, and timing of treatment.

Upon receipt of written notification from the DEQ, the permittee may be required to do any of the following:

- Conduct the chemical treatment only when a DEQ representative is present.
- Notify the DEQ a minimum of three working days prior to application of chemical(s).
- Hire a certified pesticide applicator where treatment may affect significant or unique natural resources and/or human health interests.
- Implement other measures to avoid impacting sensitive natural resources, environmental attributes and human health, such as federally or state-listed endangered or threatened species, unique habitats or ecosystems, designated critical dunes, designated environmental areas, critical fish spawning areas, and community drinking water intakes.
- For a permittee who is a licensed commercial pesticide applicator but who does not have a DEQ-approved Emergency Notification Procedure on file with the Aquatic Nuisance Control and Remedial Action Unit, submit an accurate map or written description of the exact locations where each herbicide was applied to the DEQ within 24 hours of the completion of each treatment.
- In addition to the normally required notification, also notify other person(s) specified by the DEQ.
- Any other measures determined by the DEQ as necessary to protect the natural resources or the public health, to prevent economic loss or impairment of recreational uses, to protect non-target organisms, or to help ensure control of the aquatic nuisance.

The permittee shall not employ a commercial applicator, or any legal entity with whom he/she may be associated as a principal, owner or co-owner, who has a significant history of noncompliance with Part 33 or with permits issued under Part 33, as determined by the DEQ pursuant to Rule 323.3108(3). A list of these aquatic commercial applicators who have a significant history of noncompliance is available from the DEQ upon request. The listed individuals are not prohibited from working as an employee under the direction of another certified applicator.

### Target Species Recommendations

#### *Phragmites or Common Reed*

To achieve maximum effectiveness, conduct a single chemical treatment at the correct time in the growing season using the maximum permitted application rate. Recent research in Michigan indicates that imazapyr should be applied in early summer to fall (June to first frost), while glyphosate should be applied in late summer/fall (August to first frost). A late summer/fall treatment using a 50/50 mixture of imazapyr and glyphosate (3 pints per acre each) has also been shown to be effective. Annual maintenance of the treatment area using herbicides is recommended to prevent regrowth. A single treatment is not expected to provide sustained, long-term (multi-year) control.

The use of additives, such as a non-ionic surfactant, drift control agent, and/or a small amount of tracer dye, is recommended to improve effectiveness and minimize non-target impacts. Some herbicide brands require the use of additives. See product label for details.

A certified pesticide applicator is required for imazapyr, and recommended for glyphosate, to minimize damage to native plants. Certification by the Michigan Department of Agriculture should consist of the following: Category 5 (aquatics) when treating plants in standing water or Category 6 (right-of-way pest management) when treating plants located on exposed bottomlands (no standing water).

Phragmites control using herbicides can be followed by mechanical removal (e.g., mowing or grooming) or a prescribed burn (where feasible). These activities alone generally do not control this species, but may be used in conjunction with an herbicide treatment.

Both non-native and native varieties of Phragmites are known to occur in Michigan. This General Permit authorizes chemical treatment of the non-native, invasive variety only. Proper identification of the target plant is important and may require the assistance of a trained botanist or resource manager. Assistance may be obtained from state and local government offices, local colleges and universities, extension agents, non-profit organizations, and others.

For additional Phragmites management information, please visit: [www.michigan.gov/deqaquaticinvasives](http://www.michigan.gov/deqaquaticinvasives).

#### *Purple Loosestrife*

Treatment should be made to actively growing foliage. Use of glyphosate is recommended at or beyond the bloom stage of growth (summer or fall), and triclopyr is recommended at bud to mid-flowering stage of growth. Fall treatments must occur before a killing frost. When using triclopyr, thoroughly wet foliage and stems. Avoid overspraying which may kill non-target species. Mature purple loosestrife plants are prolific seed producers and any loss of competition from nearby plants will facilitate new seedling growth from the existing seedbank in the soil. Refer to the product label for additional guidance on application timing and methods.

#### *Reed Canary Grass*

Treatment may occur in the early spring when the target plants are actively growing and prior to the emergence of other species. For glyphosate treatments, reed canary grass should be in the "boot" (when the immature seed head is wrapped in the sheath of the uppermost leaf) to the "head" (when the seed head has emerged from the leaf) stage of growth. Treatments in the fall may be applied before the plants have turned brown. Refer to the product label for additional guidance on application timing and methods.

### Mechanical Activities / Physical Alterations

Certain mechanical or physical management activities, such as mowing or vegetation removal below the ordinary high water mark of the Great Lakes, may require a separate permit or other authorization from:

- DEQ, Land and Water Management Division, Permit Consolidation Unit, P.O. Box 30204, Lansing, MI 48909-7704, phone 517-373-9244, website [www.michigan.gov/deqwetlands](http://www.michigan.gov/deqwetlands).
- U.S. Army Corps of Engineers, Detroit District, phone 1-888-694-8313.
- Local units of government.

### Surface Water Intakes (Drinking Water)

The federal labels for glyphosate, imazapyr, or triclopyr require setback distances from active surface water intakes used for potable drinking water. Such intakes exist in the Great Lakes and connecting waters and serve as drinking water sources for some communities. Refer to the specific product label for setback requirements or guidelines prior to application of these products. Contact your local water authority if you are unsure about the local drinking water source. Potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This federal label restriction does not apply to intermittent, inadvertent overspray of water in terrestrial use sites or when the target plants are not in standing water and there is no hydrological surface connection to the intake.

## **5. Notification and Posting Requirements**

The applicant is required to notify, in writing, an owner of any waterfront property within 100 feet of the area of impact, not less than seven days, and not more than 45 days, before the initial chemical treatment. Requirements for written notification are provided in Section 324.3310(h) of Part 33. If the owner is not the occupant of the waterfront property or the dwelling located on the property, then the owner is responsible for notifying the occupant.

Notice of the chemical application must be posted prior to each chemical application, in accordance with Section 324.3310(d) of Part 33. Alternate posting may be reviewed on a case-by-case basis by DEQ upon written request from the applicant. Water use restrictions listed on the label for the specific product (i.e., trade name) used shall be included on the posting sign. In addition, a 24-hour water use restriction for swimming or wading/walking through treated areas is required for each chemical application.

## **Section C. Reporting and Record Keeping**

### **1. Environmental Impacts**

The applicant is required to immediately contact the DEQ, Water Bureau, at 517-241-7734 if any fish or wildlife damage or significant non-target plant impacts occur in association with any chemical application.

### **2. Treatment Report**

A treatment report, on the approved DEQ form, must be returned postmarked no later than November 30 of the year this General Permit is in effect, even if treatment is not undertaken. Submit report to:

AQUATIC NUISANCE CONTROL AND REMEDIAL ACTION UNIT  
WATER BUREAU  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30273  
LANSING MI 48909-7773

### **3. Record Retention**

The applicant shall obtain and maintain written permission from each bottomland owner in the area of impact for 1 year from the expiration date of the General Permit, unless exempt under Section 324.3308 of Part 33. The records shall be made available to the DEQ upon request.

## Section D. Liability

### 1. Noncompliance

Initiation of any work on the permitted project confirms the applicant's acceptance and agreement to comply with all terms and conditions of this General Permit. Noncompliance with these terms and conditions, and/or the initiation of other regulated activities not specifically authorized by this General Permit, shall be cause for the modification, suspension, or revocation of this General Permit, in whole or in part. Further, the DEQ may initiate criminal and/or civil proceedings to correct project deficiencies, protect public health and natural resource values, and secure compliance with statutes.

The issuance of this General Permit does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other DEQ permits, or approvals from other units of government as may be required by law.

### 2. Property Rights

This General Permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights.

### 3. Indemnification

The applicant shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents and representatives for any and all claims or causes of action arising from acts or omissions of the applicant, or employees, agents, or representatives of the applicant, undertaken in connection with this General Permit. This General Permit shall not be construed as an indemnity by the State of Michigan for the benefit of the applicant or any other person.

Steven E. Chester, Director  
Department of Environmental Quality

By: Richard M. Hobria

Date: 12/22/08

Richard M. Hobria, Chief  
Aquatic Nuisance Control and Remedial Action Unit  
Water Bureau